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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,093	02/01/2002	Georg Steinbichler	H55-054 US	7526
21706	7590	04/27/2005	EXAMINER	
NOTARO AND MICHALOS 100 DUTCH HILL ROAD SUITE 110 ORANGEBURG, NY 10962-2100			HEITBRINK, JILL LYNNE	
			ART UNIT	PAPER NUMBER
			1732	

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/069,093	Applicant(s) STEINBICHLER ET AL.	
	Examiner Jill L. Heitbrink	Art Unit 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-11 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 7-11 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Terminal Disclaimer

1. The terminal disclaimer filed on March 4, 2005 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent No. 6,680,012 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 7-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The amendment to claim 7 as to "a frame" and "a control means" do not have direct support in the specification, and "the control means can be operated independently from movement of the antechamber frame" does not have support in the original disclosure. The specification, page 2, line 30- page 3, line2, defines "a controllable hydraulic unit 12" (which would relate to the claimed "control means") which via the lever 11 moves the closure needle 9 and shut-off means.

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Additionally, the specification at page 3, lines 9-12 states "Opening of the shut-off means 2 can also be effected in a controlled manner in order to modify the pressure pattern in the mold cavity 3 which is determined primarily by the adiabatic relief of pressure of the plastic material in the antechamber 1". The specification defines "the cylinder 8" at page 2, lines 24 and 25. A frame has not been disclosed and any stationary structure for the cylinder 8 is not disclosed in the specification.

Conventionally, an injection cylinder moves relative to the molds, such as shown in British Patent 646781 cited by applicant. Additionally, the operation of the hydraulic unit 12 would not have been operated independent of the position of the cylinder 8 or the screw 5 since the opening of the shut-off means 2 would have been during the pressing of the injection structure against the mold 7 and the closing would have been during any separation of the cylinder from the mold to avoid leakage.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bronnenkant et al. Pat. No. 3,052,925 taken together with either Tucker Pat. No. 2,318,031 or Rosato (Injection Molding Handbook).

6. See col. 1, lines 10-24 and col. 4, lines 18-45. The shut-off means (nozzle valve 63) being opened by a control means for directly modifying a pressure pattern in the

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mold cavity would have been obvious in Bronnenkant since the opening of the valve to allow the plastic material to “explode” into the mold cavity (col. 4, lines 62-68) wherein the explosion of the plastic material into the cavity changes the pressure in the cavity to modify a pressure pattern in the mold cavity. Clearly the opening of the valve would be controlled to occur after the building of pressure in the accumulator. The filling of the mold cavity causes the pressure to change in the cavity and thus “modify a pressure pattern in the mold cavity”.

7. It is unclear in the specification and claims as to what type of modification in the pressure pattern is occurring from the controlled manner of opening the valve.

Additionally, it is unclear as to what manner the control is and how the opening of the shut-off means effects the pressure pattern in the mold cavity. The following is a different interpretation of these terms which are obviously met by Bronnenkant et al.

8. The pressure in the antechamber is controlled to “a predetermined pressure” in Bronnenkant (col. 4, lines 26-36). The shut-off means being opened in a controlled manner in order to modify a pressure pattern in the mold cavity would have been obvious in Bronnenkant since a change in the predetermined pressure in the chamber will inherently change the pressure pattern in the mold cavity and the nozzle valve will be opened in a controlled manner after the predetermined pressure has been reached in the chamber.

9. Tucker teaches the alternative use of a valve 24 which is moved by controlled hydraulic actuated motor 28 (page 5, right column, lines 8-12) and the use of valve member 129 which is opened by the motion of the mold (page 7, right column 64 – left

column 13). It would have been obvious to a person of ordinary skill in the art to use a control means that is operated independently from the movement of the injection cylinder frame in Bronnenkant since these valves are known to be alternative in the art of injection molding.

10. Rosato teaches the alternative use of the valves in Fig. 3-21. It would have been obvious to a person of ordinary skill in the art to use a control means that is operated independently from the movement of the injection cylinder frame in Bronnenkant since these valves are known to be alternative in the art of injection molding.

11. Claims 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bronnenkant et al. Pat. No. 3,052,925 taken together with either Tucker Pat. No. 2,318,031 or Rosato (Injection Molding Handbook) in view of Xu Pat. No. 6,322,347.

12. Xu teaches a process of injection molding foam material wherein the material accumulates in the space 81 closed by valve 64 with a pressure of over 1000 bars (col. 11, lines 58-65 pressure of about 1500 to about 30,000 psi). The pressure produced in Bronnenkant for the expansive pressure to fill the mold being over 1000 bars would have been obvious to a person of ordinary skill in the art since these high pressure are known in the art of injection molding so as to maintain a single phase material prior to exploding into the mold cavity.

13. Claims 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu Pat. No. 6,322,347 taken together with Weidner et al. Pat. No. 4,266,928.

14. Xu discloses a process of injection molding foam material wherein the material accumulates in the space 81 closed by valve 64 with a pressure of over 1000 bars (col.

11, lines 58-65 pressure of about 1500 to about 30,000 psi). Weidner et al. teaches that the pressure difference between the accumulator and the mold causes the foam to be sucked in the mold. It would have been obvious to a person of ordinary skill in the art that the high pressure within the space 81 will cause, upon opening of the valve 64, the existence of at least half of the pressure achieved in the cavity in the method occurring even if the volume of the antechamber is kept constant during the injection operation. Clearly, even if the volume of the antechamber is kept constant material will flow and foam into the cavity of Xu to a significant amount caused by the high pressure in the space 81. "At least half of the pressure achieved in the mould cavity" is dependent on the pressure achieved in the mold cavity and thus is variable. The pressure achieved in the mold cavity of Xu is taught to be low so as to provide the desired nucleation density.

Response to Arguments

15. Applicant's arguments filed March 4, 2005 have been fully considered but they are not persuasive.

16. Applicant states that Claim 7 "the control means can be operated independently from movement of the antechamber frame" has support in the specification since a needle 9, a lever 11, and a hydraulic unit 12 provide the control means and they are independent of the injection side as shown in the drawings. Applicant states that the drawings also show that the antechamber has a basic structure or frame. The examiner does not find any support for the control means operating independently from the movement of the antechamber frame. No frame for the antechamber is disclosed. The

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cylinder 8 is disclosed, but any type of support for the cylinder has not been described. The movement of the shut-off means would have been related to the movement of the mold opening and any movement of the injection cylinder and screw. Additionally, the specification on page 2, lines 19-21 state "The method according to the invention can be carried into effect on any conventional injection-molding apparatus insofar as the feed flow to the mould cavity is controllable by a shut-off means." As shown by Tucker, Rosato and many of the other cited prior art in this application, the injection cylinder and nozzle are known to be moved away from the mold such as to allow faster cooling of the article in the cavity or removal of the article in the cavity, and the injection cylinder and nozzle may remain in position against the mold between injection cycles such as when temperature difference are adequately controlled. The present specification does not provide any information as to how the cylinder 8 is supported. Also, Nouel Pat. No. 3,241, 192 (columns 11 and 12 "Feeding Assembly") and Sato et al. Pat. No. 5,057,255 (col. 3, lines 58-66) describe the use of mechanical valves with sliding injection cylinders.

17. Applicant argues that Bronnenkant fails to teach a control means that can be operated without moving the antechamber. Tucker and Rosato each teach the obvious alternative use of sliding shut-off valve and a mechanical shut-off valve.

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill L. Heitbrink whose telephone number is (571) 272-1199. The examiner can normally be reached on Monday-Friday 9 am -2 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jill L. Heitbrink
Primary Examiner
Art Unit 1732

jlh